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MEMORANDUM

July 20, 1983

TO: Dick Burkhalter

FROM: Bruce Johnson BJ

SUBJECT: Analysis of Pulp Mill Effluent for Retene and Resin Acids

The report of a 1982 study conducted by NOAA indicated a high incidence of abnormalities in English Sole collected in Everett Harbor. The report also noted that retene, a derivative of a resin acid, was detected in sediment samples from Everett Harbor and waterways near other pulp mills.

For analysis of retene and resin acids in pulp mill wastewater, 24-hour composite samples were collected at the Scott mill on March 2, 1983 and at the Georgia-Pacific mill on April 14, 1983. Portable samplers were set up by Dan Tangerone of EPA for sampling treatment plant influent and effluent at each mill. The Scott discharge that does not receive biotreatment was also sampled. Analysis of these samples, as listed below, shows that only two resin acids were present at levels above 20 ug/ℓ and both were reduced to less than 20 ug/ℓ by treatment.

	Scott			G-P	
Resin Acids, ug/ℓ	In	Eff	003	In	Eff
Hexadecanoic	-	-	-	4.2	3.0
Isopimaric	285	ND	ND	15.0	4.3
Levopimaric	-	-	-	0.2U	0.2U
Dehydroabietic	1463	18	ND	150	3.9
Neoabietic	ND	ND	ND	0.2U	0.2U
Retene	0.9	0.45	0.1U	0.3U	0.3U
Conventional					
BOD_5, mg/ℓ	550	42	66	410	62
TSS, mg/ ℓ	92	120	34	83	140
pH, units	2.2*	7.2	6.7	6.1	6.3

In - influent to biotreatment
Eff - effluent from biotreatment
003 - no biotreatment
ND - < 10 ug/ℓ
U - quantification limit
* - pH value prior to neutralization